I – Academic Planner

A. Teaching Plan* (Year: 2021, Semester: ODD)

Teacher's Name DR. VANDANA SARIN WALIA Department STATISTICS

S. No.	UPC	Paper Name	Core/AECC/ GE/SEC	Topic/Unit	Start Date	End Date
1.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Introduction to times series data, application of time series from various fields, Components of a times series, Decomposition of time series.	22nd July, 2021	28th July, 2021
2.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Estimation of trend by free hand curve method, method of semi averages, fitting mathematical curve and growth curves. **Practical work**.	29th July, 2021	10th Aug 2021
3.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Estimation of trend by method of moving averages. Detrending: Effect of elimination of trend on other components of a time series. **Practical work.**	11th Aug, 2021	23rd Aug, 2021
4.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Seasonal Component: Estimation of seasonal component by the methods of: Simple averages, Ratio to Trend, Ratio to Moving Averages and Link Relative method. Deseasonalization. **Practical work**.	24th Aug, 2021	5th Sept 2021
5.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Cyclic Component: Harmonic Analysis. Random Component: Variate difference method. **Practical work.**	6th Sept 2021	22nd Sep., 2021
6.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Stationary Time series, Weak stationarity, autocorrelation function and the correlogram. Some Special Processes: Moving-average (MA) process and Autoregressive (AR) processes. Estimation of the parameters of AR (1) and AR (2). Introduction to ARMA and ARIMA models. **Practical work**.	21st Sep., 2021	25th Oct., 2021
7.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Introduction to methods of Forecasting a time series. Exponential smoothing. **Practical work**.	26th Oct., 2021	28th Oct., 2021
8.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Short-term forecasting methods: Brown's discounted regression, Box-Jenkins method, Bayesian forecasting. **Practical Work.**	28th Oct., 2021	11th Nov. 2021
9.	32377905	Time Series Analysis	STAT-DSE – 1 (A)	Revision work and Group Project Presentations	10th Nov., 2020	17th Nov., 2020
1.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 1) Presentation of data in: a) Discrete & Continuous frequency table b) Cumulative frequency table	Week 1-2**	
2.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 2) Graphical representation of data- a) Frequency curve, frequency polygon and histogram	Week 3	

				b) Ogives	
3.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 3) Measures of Central tendency: a) Based on Arithmetic mean: • Formulae (Direct Method) • Change of Origin and Scale b) Based on Median and partition values: • Formulae (Direct Method) • Graphically c) Based on Mode: • Formulae (Direct Method) • Graphically • By the method of grouping	Week 4-5
4.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 4) Measures of Dispersion - a) Quartile deviation using formula and graphically b) Mean Deviation c) Standard deviation and variance: • Formulae (direct method) • Change of origin & Scale	Week 6
5.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 5) Coefficient of dispersion and variation 6) Combined mean and combined variance	Week 7
6.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 7) Raw moments 8) Moments about any arbitrary point 9) Central Moments	Week 8-9
7.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 10) Moments using relation between Raw moments, Moments about any arbitrary point and Central Moments 11) Correct moments involving wrong data	Week 10-11
8.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 12) Skewness based on mean, median, mode and standard deviation 13) Skewness and kurtosis based on moments	Week 12-13
9.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 14) Problem based on missing frequencies	Week 14
10.	32371101	Descriptive Statistics	STAT-C-101	Practical work based on: 15) Theory of attributes- a) Representation of word problems in the form of class frequencies b) Based on Fundamental set of class frequencies c) Association and independence of attributes.	Week 15

***Online Teaching **From commencement of Practical Classes**

B. Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
568	Statistics	32377905	UNIT I (Test)	17th Aug., 2021	17th Aug., 2021 (Returning)
568	Statistics	32377905	UNIT I & II (Assignment)	9th Nov. 2021	9th Nov 2021
568	Statistics	32377905	UNIT I-IV (Project)	Nov. 2021	Nov. 2021
568	Statistics	32371101	UNITS I-IV	Week 16	

***Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester**

I – Academic Planner

A. Teaching Plan (Year: 2021, Semester: EVEN- Jan to May)

Teacher's Name DR. VANDANA SARIN WALIA Department STATISTICS

S. No.	UPC	Paper Name	Core/AECC/ GE/SEC	Topic/Unit	Start Date	End Date
1.	32371601	Design of Experiments	STAT-C-601	Experimental designs: Role, historical perspective, terminology, experimental error, basic principles, uniformity trials, fertility contour maps, choice of size and shape of plots and blocks.	1st Jan., 2021	11th Jan., 2021
				Basic designs: Completely Randomized Design (CRD), Randomized Block Design (RBD), Latin Square Design (LSD) – layout, model and statistical analysis, relative efficiency, analysis with missing observations. **Practical work**	14th Jan., 2021	1st Feb., 2021
				Incomplete Block Designs: Balanced Incomplete Block Design (BIBD) – parameters, relationships among its parameters, incidence matrix and its properties, Symmetric, Resolvable, and Affine Resolvable BIBD, Intra Block analysis, complimentary, Residual, Dual, Derived BIBD. **Practical work.**	2nd Feb., 2021	18th Feb., 2021
				Factorial experiments: advantages, notations and concepts, 2^2, 2^3...2^n and 3^2 factorial experiments, design and analysis, Total and Partial confounding for 2^n ($n \leq 5$), 3^2 and 3^3. Factorial experiments in a single replicate. **Practical work**.	22nd Feb., 2021	29th Mar., 2021
				Fractional factorial experiments: Construction of one-half and one-quarter fractions of 2^n ($n \leq 5$) factorial experiments, Alias structure, Resolution of a design. **Practical work.**	30th Mar., 2021	Dispersal of classes
2.	32371402	Linear Models	STAT-C-402	Gauss-Markov set up: Theory of linear estimation, Estimable linear parametric functions, Method of least squares, Gauss-Markov theorem, Estimation of error variance. Distribution of quadratic forms. **Practical work**	1st Jan., 2021	24th Jan., 2021
				Analysis of Variance: Definition of fixed, random and mixed effect models, ANOVA and ANOCOVA in one-way classified data for fixed effect models, ANOVA in two-way classified data with equal number of observations per cell for fixed effect models. **Practical work**	27th Jan. 2021	22nd Feb., 2021
				Regression analysis: Simple and Multiple Linear Regression analysis, Estimation and hypothesis testing in case of simple and multiple regression analysis, Confidence intervals and Prediction intervals, Concept of model matrix and its use in estimation. Effect of orthogonal columns in the X matrix, Partial F-test and Sequential F-test, Bias in regression estimates. **Practical work**	24th Feb., 2021	29th Mar. 2021
				Model checking: Prediction from a fitted model, Residuals and Outliers, Lack of fit and pure error, Violation of usual assumptions concerning normality, Homoscedasticity and collinearity, Diagnostics using quantile-quantile plots. **Practical work**	31st Mar. 2021	Dispersal of classes

***Online Classes due to Covid-19**

B. Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
568	Statistics	32371601	UNIT I-III (Test)	30th Mar., 2021	April 2021 (Returning)
568	Statistics	32371601	UNIT I-IV (Assignment)	26th April, 2021	30th April, 2021
568	Statistics	32371402	UNIT I-III (Test)	30th Mar., 2021	April 2021 (Returning)
568	Statistics	32371402	UNIT I-IV (Assignment)	26th April, 2021	30th April, 2021

***Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester**